ABSTRACT OF THE DISCLOSURE

A method for fast motion estimation determines the relative motion between a first and a second image by using either a bi-directional gradient method (BDGM) or a symmetric gradient method (SGM) approach. The global motion, defined by a plurality of parameters in which each parameter has an interval, is estimated by providing an initial estimate of two translation parameters each having an interval of values, dividing each interval into two non-equal (BDGM) or equal (SGM) sub-intervals, and using an iterative process starting with the initial estimate of the two equal sub-intervals. The iterative process calculates the optimal value (BDGM) or a center value (SGM) of the value interval of each parameter, and yields a final parameters vector defining the global motion. The bi-directional and the symmetric gradient methods provide faster convergence and smaller linearization error, or convergence in cases where regular gradient methods do not converge.